San Domingo. The eyes, as restored, show two horizontal green stripes on a greenish purplish background.

TABANUS ANNULATUS Say.

A specimen from Louisiana agrees very well with Wiedemann's description. though it does not have the dark abdomen as Say describes.

METEOROLOGICAL SUMMARY FOR THE YEAR 1886.

PREPARED BY PROF. F. H. SNOW, OF THE UNIVERSITY OF KANSAS, FROM OBSERVATIONS TAKEN AT LAWRENCE.

The year 1886 was marked by an excessively cold January, a long, hot summer, a dry atmosphere, light winds, and clear skies. But the most remarkable characteristic of the year was the very light rainfall of its second half. Up to the 1st of July the rainfall was only 1.79 inches below the average, but for the remainder of the year there was a deficiency of 9.23 inches, the total precipitation being less than half the normal amount. Although the total rainfall was much less than in any previous year of our record, the copious rains of the first six months secured good crops of wheat and half crops of corn in the districts most seriously affected by the drouth.

TEMPERATURE.

Mean temperature of the year 52.96°, which is .04° above the mean of the eighteen preceding years. The highest temperature was 105°, on August 16th; the lowest was 18° below zero, on the 9th of January, giving a range of 123°. Mean at 7 A. M., 47.13°; at 2 P. M., 62.16°; at 9 P. M., 51.28°.

Mean temperature of the winter months 23.33°, which is 5.88° below the average winter temperature; of the spring 54.57°, which is .96° above the average; of the summer 76.80°, which is .96° above the average; of the autumn 57.17°, which is 3.39° above the average.

The warmest month of the year was July, with mean temperature 79.54°; the warmest week was August 11th to 17th, mean 86.93°; the warmest day was August 16th, mean 90.62°. The mercury reached or exceeded 90° on 53 days, (13 more than the average number,) viz.: two in May, three in June, twenty-one in July, eighteen in August, and nine in September. There were five days on which the temperature exceeded 100°—one in July and four in August.

The coldest month was January, with mean temperature 14.32°; the coldest week was January 6th to 12th, mean temperature .61° below zero; the coldest day was January 8th, mean 12.75° below zero. The mercury fell below zero on 16 days, of which 10 were in January, 3 in February, and 3 in December.

The last hoar frost of spring was on April 27th; the first hoar frost of autumn was on October 1st; giving an interval of 155 days, or over 5 months, entirely without frost. This is precisely the average interval.

The last severe frost of spring was on April 5th; the first severe frost of autumn was on the 27th of October; giving an interval of 203 days, or nearly 7 months, without severe frost. The average interval is 198 days. No frosts during spring and autumn caused damage to crops of grain and fruit, but the low temperatures of January were universally destructive to peach buds.

RAIN.

The entire rainfall, including melted snow, was 24.25 inches, which was 11.02 inches below the annual average. Either rain or snow, or both, in measurable quan-

tities, fell on 103 days—one less than the average. On 15 other days, rain or snow fell in quantity too small for measurement.

The number of thunder showers was 28. There was but one light hail storm during the year.

The drouth which prevailed during July, August and September was the only serious drouth in Kansas since 1874. From June 26th to July 24th, an interval of 27 days, there was an entire absence of rain. From the same date to September 16th, a period of 81 days, the rainfall was but 2.85 inches. In 1874 the drouth extended from June 14th to September 3d, an interval of 80 days, during which the rainfall was only 2.19 inches. Thus the drouth of '86 was one day longer than that of '74, but the latter began nearly two weeks earlier in the season, and was therefore more disastrous in its effects.

SNOW.

The entire depth of snow was 23.50 inches, which is 1.96 inches above the average. Of this amount twelve inches fell in January, one inch in February, four inches in March, four inches in April, half an inch in November, and two inches in December. Snow fell on 31 days. The last snow of spring was on March 27th. The first snow of autumn was on November 11th—three days later than the average date.

FACE OF THE SKY.

The mean cloudiness of the year was 39.64 per cent., which is 4.99 per cent. below the average. The number of clear days (less than one-third cloudy) was 189; half clear (from one to two-thirds cloudy), 91; cloudy (more than two-thirds), 85. There were 59 days on which the cloudiness reached or exceeded 80 per cent. There were 64 entirely clear and 39 entirely cloudy days. The clearest month was October, with a mean of 25.91 per cent.; the cloudiest month was January, mean 61.93 per cent. The percentage of cloudiness at 7 A. M. was 44.03; at 2 P. M., 44.46; at 9 P. M., 30.44.

DIRECTION OF THE WIND.

During the year, three observations daily, the wind was from the N. W. 227 times, S. W. 221 times, S. E. 172 times, N. E. 157 times, S. 137 times, N. 77 times, E. 65 times, W. 39 times. The south winds (including southwest, south, and southeast) outnumbered the north (including the northwest, north, and northeast) in the ratio of 530 to 461.

VELOCITY OF THE WIND.

The number of miles traveled by the wind during the year was 127,769, which is 9,070 miles below the annual average for the preceding 13 years. This gives a mean daily velocity of 350.03 miles and a mean hourly velocity of 14.58 miles. The highest velocity was 70 miles an hour, on March 21st; the highest daily velocity—the second highest on our record—was 1,120 miles, on the 8th of January; the highest monthly velocity was 13,900 miles, in March. The windiest months were January, March, April and November; the calmest months were May, June, July and August. The average velocity at 7 A. M. was 12.56 miles; at 2 P. M., 16.06 miles; at 9 P. M., 13.77 miles.

BAROMETER.

Mean height of barometer column, 29.111 inches, which is .004 inch above the annual average. Mean at 7 A. M., 29.128 inches; at 2 P. M., 29.092 inches; at 9 P. M., 29.114 inches; maximum, 29.788 inches, on December 4th; minimum, 28.482 inches, on February 9th; yearly range, 1.306 inches. The highest monthly mean was 29.254 inches, in December; the lowest was 29.037 inches, in July. The barometer observations are corrected for temperature and instrumental error only.

RELATIVE HUMIDITY.

The average atmospheric humidity for the year was 66.5; at 7 A. M., 76.9; at 2 P. M., 50; at 9 P. M., 72.5. The dampest month was January, with mean humidity, 83; the driest month was July, mean humidity, 58.4. There were only 5 fogs during the year. The lowest humidity for any single observation was 16 per cent., on November 2d and 22d.

The following tables give the mean temperature, the extremes of temperature, the number of inches of rain and snow, the number of rainy days, the number of thunder showers, the mean cloudiness, the relative humidity, the number of fogs, the velocity of the wind, the mean and extreme barometer heights, for each month of the year 1886, and a comparison with each of the 18 preceding years.

YEAR 1886.

1886.	*Mean temperature*	*Maximum temperature*	*Minimum temperature*	*Rain, inches*	*Snow, inches*	*Rainy days*	*Thunder storms*	*Mean cloudiness*	*Humidity*	*No. of fogs*	*Miles of wind*	*Mean barometer*	*Maximum barometer*	*Minimum barometer*
January	14.32	41.5	-18.0	2.28	12.0	15	0	61.93	83.0	2	13,090	29.200	29.721	28.627
February	31.64	62.0	-7.0	0.56	1.0	7	1	42.38	73.6	2	11,170	29.166	29.725	28.482
March	40.40	79.0	11.0	1.63	4.0	10	1	55.05	67.7	0	13,900	29.069	29.510	28.589
April	54.80	85.0	19.0	1.38	4.0	12	2	52.66	65.1	1	13,040	29.053	29.427	28.640
May	68.50	91.0	44.0	5.72	0.0	9	6	34.52	67.9	0	7,920	29.024	29.322	28.620
June	71.85	92.0	49.0	3.71	0.0	12	3	38.00	68.4	0	6,372	29.052	29.437	28.804
July	79.54	100.0	57.0	0.11	0.0	4	2	31.83	58.4	0	6,857	29.037	29.183	28.853
August	79.02	105.0	51.5	2.49	0.0	11	6	28.60	60.1	0	8,840	29.048	29.214	28.861
September	71.19	97.0	42.0	2.34	0.0	8	3	32.00	60.7	0	10,315	29.090	29.377	28.731
October	60.23	86.0	27.0	1.59	0.0	4	3	25.91	59.1	0	10,865	29.219	29.416	28.795
November	40.08	76.0	15.0	1.61	0.5	5	1	35.11	63.6	0	13,230	29.121	29.551	28.523
December	24.03	58.0	-6.0	0.83	2.0	6	0	37.77	73.4	0	12,170	29.254	29.788	28.825
Mean	52.96	81.0	23.7	2.02	2.0	9	3	39.64	66.5	.04	10,647	29.111	29.473	28.696

NINETEEN YEARS, 1868-1886.

Year	*Mean temperature*	*Maximum temperature*	*Minimum temperature*	*Hot days, above 90°*	*Zero days*	*Days between severe frosts*	*Rain, inches*	*Snow, inches*	*Rainy days*	*Thunder storms*	*Mean cloudiness*	*Humidity*	*Number of fogs*	*Miles of wind*	*Mean barometer*
1868...	52.77	101.0	-16.5	43	7	160	37.48	27.50	77	.....	42.35	.....	.....	.....	.....
1869...	50.51	96.0	-5.0	23	2	167	38.51	18.00	105	33	49.23	78.2	19	.....	29.103
1870...	53.70	102.0	-10.0	51	6	197	31.32	9.50	100	27	47.88	68.4	13	.....	29.097
1871...	53.56	103.0	-6.0	48	8	218	33.23	29.75	120	24	47.37	65.9	6	.....	29.076
1872...	51.30	97.0	-18.0	45	16	192	32.63	23.25	116	40	44.33	64.4	11	.....	29.112
1873...	51.96	104.0	-26.0	48	9	165	32.94	26.50	101	17	42.46	64.0	6	154,508	29.093
1874...	53.68	108.0	-3.0	58	2	187	28.87	43.00	99	20	45.54	65.7	14	145,865	26.121
1875...	50.60	99.0	-16.5	32	12	196	28.87	5.00	106	21	44.81	66.7	5	145,316	29.102
1876...	52.76	98.0	-5.0	36	4	179	44.18	25.75	102	29	41.27	66.8	4	148,120	29.102
1877...	54.16	99.0	-9.0	20	3	217	41.09	15.50	126	39	47.12	72.6	11	113,967	29.117
1878...	55.33	98.0	-6.0	35	7	228	38.39	25.50	107	38	40.65	70.2	5	125,793	29.067
1879...	54.67	99.5	-16.0	48	13	203	32.68	10.35	90	36	40.01	67.1	10	124,768	29.127
1880...	54.01	101.0	-12.0	41	2	211	32.65	7.00	89	29	40.15	67.9	18	146,039	29.123
1881...	54.65	104.0	-8.0	08	6	210	33.27	32.50	110	31	47.42	70.1	11	141,430	29.103
1882...	54.94	105.0	-6.5	40	1	232	27.60	18.00	102	26	45.41	68.6	14	137,736	29.113
1883...	51.66	96.5	-14.0	26	8	217	40.65	12.50	106	32	45.24	69.7	18	141,164	29.135
1884...	51.30	98.0	-21.5	20	14	198	43.70	29.00	105	35	47.56	72.6	28	131,188	29.111
1885...	51.01	96.0	-14.5	27	21	176	36.97	33.00	103	31	44.57	71.3	9	123,013	29.107
1886...	52.96	105.0	-18.0	53	16	203	24.25	23.50	103	28	39.64	66.5	5	127,769	29.111
Mean,	52.92	100.5	-12.2	40	8	198	34.70	21.85	104	30	44.37	68.7	12	136,191	29.107